

REMARKS

Claims 1-16 and 19-22 are pending in the application. Claim 21 has been amended to address the issues raised by the Examiner. Favorable reconsideration of the application, as amended, is respectfully requested.

I. ALLOWABLE SUBJECT MATTER

Applicants acknowledge with appreciation the indicated allowability of claims 3, 4, 6, 7, 10, 12, 13, 15, and 16 subject to being rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph, and amended to independent form. For at least the reasons set forth below, it is respectfully submitted that all pending claims are now in condition for allowance.

II. REJECTIONS OF CLAIMS 21 AND 22 UNDER 35 U.S.C. § 101

Claims 21 and 22 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claim 21 has been amended to present what was inherently present in the previously submitted original claim. Thus, this amendment is not believed to relate to patentability, and does not narrow the claim scope as compared to the previous claim.

As admitted by the Examiner, MPEP states that “a computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.” In other words, a computer-readable medium encoded with a data structure is statutory as long as (i) the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components, and (ii) the computer components permit the data structure’s functionality to be realized.

Claim 21 requires that an “additional data field” includes a portion of payload data, and that the HDSL data frame is capable of being received by a DSL modem. Thus, the above-identified requirements (i) and (ii) are met here because the claim specifies a specific interrelationship between the data frame and a computer component (here, a DSL modem) which utilizes the data frame, and which permits the data frame’s functionality to be realized. In addition, claim 21 recites that the HDSL data frame “increas[es] data throughput.” Such an increase in data throughput is what the claimed data frame realizes by its functionality. Therefore, it is respectfully submitted that claim 21 satisfies the two requirements stated in MPEP. Withdrawal of the rejections is respectfully requested.

In response to the Examiner's assertion that claim 21 does not define functional characteristics of the data frame, Applicants respectfully submit that inclusion of a portion of the payload data is a functional characteristic of the data frame since such inclusion of the payload data enables a DSL modem to retrieve at least a part of the payload data. Neither the MPEP nor Lowry requires that a data structure represent executable computer code. The MPEP and the case law do not require executable computer code stored in the data structure that cause a computer component to perform a function. All the MPEP and the case law mandate is to "impart a physical organization on the information stored in memory" (see, *In re Lowry*, 32 USPQ2d 1031, 1034). The claimed invention imparts a physical organization on the information because the additional field recited in claim 21 is physically organized to include a portion of the payload data. This is sufficient recitation of a physical organization in view of the MPEP and Lowry. Thus, claim 21 meets the requirements for statutory subject matter.

Lowry's data structure includes a data structure, a plurality of attribute data objects, and other data objects. However, as recited in Lowry's claim 1, these data objects stored in a memory are "access[ed] by an application program being executed on a data processing system" (32 USPQ2d at 1033). Therefore, Lowry's data objects also are in no way executable computer code which performs a function. Rather, Lowry's data structures merely "facilitate data management by data processing systems" (32 USPQ2d at 1034). In this regard, the data structure of claim 21 is the same as that of Lowry. That is, the present invention also facilitates an increase in data throughput in a DSL modem system. As such, if the present invention is non-statutory, then Lowry's invention is as well. It is respectfully submitted that the rejection of claim 21 is following the overruled Board's determination in Lowry, rather than the CAFC's.

As summarized by the court, "Lowry's data structures are physical entities that provide increased efficiency in computer operation" (32 USPQ2d at 1035). In a similar manner, the claimed data structure is also a "physical entity" that actually provides an increased capacity of payload data in a data transmission system. Therefore, the invention of claim 21 should be treated in the same way as Lowry's data structures.

For at least the above reasons which are fully supported by MPEP and the Lowry case, the inventions of claims 21 and 22 are believed to be statutory. Withdrawal of the rejections is respectfully requested.

III. REJECTION OF CLAIM 19 UNDER 35 U.S.C. § 112

Claim 19 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter of undue breadth. The claim language recites "framing circuitry." Thus, the framing circuitry of claim 19 covers only a part of conceivable means for employing the field as compared to a "means" element since the term "framing circuitry" excludes certain embodiments

entirely implemented by software. Therefore, claim 19 is different from a single means claim, which arguably covers every conceivable means.

Applicants respectfully submit that the case law which supports Applicants' position cannot be ignored. As pointed out by Applicants in the previous response dated June 10, 2002, there are cases in which terms such as a "circuit" and a "detector" are held sufficiently structural. Accordingly, the term "framing circuitry" also does convey to those skilled in art a variety of structures known as "framing circuitry." Therefore, claim 19 is not a single means claim, and thus, should not be subject to the undue breadth rejection. Withdrawal of the rejection is respectfully requested.

IV. REJECTIONS OF CLAIMS 1, 2, 5, 8, 9, 11, 14, AND 19-21 UNDER 35 U.S.C. §103

Claims 1, 2, 5, 8, 9, 11, 14, and 19-21 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,246,695 ("Seazholtz") in view of U.S. Patent No. 5,533,028 ("Hita"). These claims are believed to be allowable for at least the following reasons.

In general, to rely on a reference under § 103, it must be an analogous prior art. This fundamental requirement has not been met because Hita is neither in the field of Applicants' endeavor, nor is it reasonably pertinent to the particular problem with which the present invention is concerned. Hita is in no way in the field of Applicants' endeavor since it relates to a wireless mobile communications system using radio-frequency TDMA procedures, which is a completely different technical field from that of the invention, i.e., a network digital subscriber line transmission between SDSL modems. Hita, column 2, line 65 - column 3, line 11.

Nor is Hita reasonably pertinent to the particular problem with which the present invention is concerned because the primary objective of Hita is the provision of the control field C for transmitting control and/or signalling information between the base station controller 1 and the base stations 2. In other words, Hita is concerned with addition of overhead data for system operation, which does not contribute to transmission of payload data at all. See, column 3, line 54 - column 4, line 18. "[T]he information contained in the control field C is of essential importance for system operation"(*Id.*) (emphasis added).

By contrast, the claimed invention employs a field for transmission of a portion of payload data. In short, the present invention is concerned with transmission of additional payload data while the Hita reference is not. Thus, Hita is not pertinent to the problem which the invention attempts to resolve.

Accordingly, for at least these reasons, Applicants respectfully submit that those skilled in the art would not be motivated to combine the teachings of Seazholtz with the teachings of Hita.


Even assuming, for the sake of argument, that one having ordinary skill in the art would modify the system of Seazholtz with the data format of Hita, the resulting system would not include the features of the invention defined in independent claims. As admitted by the Examiner, Seazholtz fails to teach or suggest a field used for data transmission, which is not conventionally used for transmitting data. Nor does Hita suggest such a field as recited in the claims. Hita's control field C is used merely for system operation (column 3, lines 66-67), not for transmitting payload data. Such system operation performed by the control field C includes only interchange of control information and/or signalling between the base station controller and the base station (column 2, lines 8-17). Thus, the control field C in Hita has nothing to do with transmission of payload data. In Hita, actual payload data is included *only* in the information field D, rather than the control field C (column 3, lines 25-27; and column 3, lines 63-65). Since Hita's control field C does not contain any payload data, the Hita reference cannot be used for asserting that Hita make up the deficiencies of Seazholtz.

For at least these reasons set forth above, independent claims 1, 11, 14, 19, 20, and 21 and other dependent claims are believed to be allowable over Seazholtz and Hita. Withdrawal of the rejections is respectfully requested.

V. CONCLUSION

Applicants believe that all pending claims are in condition for allowance, and respectfully requests a Notice of Allowance at an early date. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 510-843-6200.

Respectfully submitted,
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Limited Recognition under 37 CFR §10.9(b)

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APPENDIX -- VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 21 has been amended as follows:

21. (Twice Amended) A high data rate digital subscriber line (HDSL) data frame embodied in a carrier wave for increasing data throughput and capable of being received by a digital subscriber line (DSL) modem, the data frame comprising a plurality of overhead fields and a plurality of payload fields, each of the payload fields having an additional field associated therewith for enabling a feature corresponding to one of T1 and E1 transmission protocols and not conventionally used for transmitting payload data, wherein the additional field includes a portion of the payload data.



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Expires: November 6, 2003

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